MIAMI ODMDS
Site Management and Monitoring Plan
August 1995

Introduction. It is the responsibility of EPA under the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 to manage and monitor each of the Ocean Dredged Material Disposal Sites (ODMDSs) designated by the EPA pursuant to Section 102 of MPRSA. As part of this responsibility, a management and monitoring plan has been developed to specifically address the deposition of dredged material into the Miami ODMDS.

Site Management and Monitoring Team. An interagency Site Management and Monitoring team, consisting of representatives of EPA, COE, State of Florida, NOAA-AOML, University of Miami, and the Port of Miami has been established to review and comment on all Miami ODMDS management and monitoring activities. Other agencies will be asked to participate where appropriate. This SMMP team will evaluate existing monitoring data, the type of proposed disposal (i.e., O&M vs. construction), the type of material (i.e., sand vs. mud), location of placement within the ODMDS and quantity of proposed material. This team will make recommendations to the responsible agency on appropriate monitoring techniques, level of monitoring, significance of results and potential management options.

SITE MANAGEMENT

Section 228.3 of the Ocean Dumping Regulations (40 CFR 228.3) defines ODMDS site management as "..regulating times, rates, and methods of disposal and quantities and types of materials disposed of; developing and maintaining effective ambient monitoring programs for the site; conducting disposal site evaluation studies; and recommending modifications in site use and/or designation." The plan may be modified if it is determined that such changes are warranted as a result of information obtained during the monitoring process.

Management Objectives. There are three primary objectives in the management of each ODMDS. These are:

- o Protection of the marine environment;
- o Beneficial use of dredged material whenever practical; and
- o Documentation of disposal activities at the ODMDS.

The following sections provide the framework for meeting these objectives to the extent possible.

Material volumes. The Miami ODMDS was first used in April, 1990 for disposal of maintenance material. Because routine maintenance dredging is sporadic, the next expected disposal at the proposed ODMDS should be the newly authorized deepening of the Federal Miami Harbor Project. Approximately five million cubic yards is expected to be disposed within the ODMDS from this project. Subsequent maintenance dredging should not occur until 2000.

TABLE: Volumes Disposed and Estimated Volumes of Material to be Disposed at Miami Site

Completion Date	Type of Action	Volume (cubic yards)	Composition
1990	Maintenance	225,000	silt/clay
1995	U.S. Coast Guard Basin	3,000	sand/gravel
1995	NOAA Restoration	300	limerock rubble
1996	Deepening Proj.	5,000,000	sand/silt/ clay/rubble
2000	Maintenance	250,000	silt/clay

Because the site is located in deep water (427 to 785 ft.), no restrictions are presently placed on disposal volumes. Disposal of unrestricted volumes is dependent upon results from future monitoring surveys.

Material suitability. Two basic sources of material are expected to be placed at the site, i.e. construction or new work dredged material and maintenance dredged material. These sediments will consist of mixtures of silt, clay and sand, in varying percentages.

The disposition of any significant quantities of beach compatible sand from future projects will be determined during permitting activities for any such projects. It is expected that the State of Florida will exercise its authority and responsibility, regarding beach nourishment, to the full extent during any future permitting activities. Utilization of any significant quantities of beach compatible dredged material for beach nourishment is strongly encouraged and supported by EPA where environmentally acceptable. Disposal of coarser material should be planned to allow the material to be placed so that it will be within or accessible to the sand-sharing system, to the maximum extent practical, and following the provisions of the Clean Water Act.

In addition, the suitability of dredged material for ocean

disposal must be verified by the COE and agreed to by EPA prior to disposal. Verification will be valid for three years from the time last verified with the option of a two year extension. Verification will involve: 1) a case-specific evaluation against the exclusion criteria (40 CFR 227.13(b)), 2) a determination of the necessity for bioassay (toxicity and bioaccumulation) testing for non-excluded material based on the potential for contamination of the sediment since last tested, and 3) carrying out the testing and determining that the non-excluded, tested material is suitable for ocean disposal.

Documentation of verification will be completed prior to use of the site. Documentation for material suitability for dredging events proposed for ocean disposal more than 5 years since last verified will be a new 103 evaluation and public notice. Documentation for material suitability for dredging events proposed for ocean disposal less than 5 years but more than 3 years since last verified will be an exchange of letters between the COE and EPA.

Should EPA conclude that reasonable potential exists for contamination to have occurred, acceptable testing will be completed prior to use of the site. Testing procedures to be used will be those delineated in the 1991 EPA/COE Dredged Material Testing Manual and 1992 Regional Implementation Manual. This includes how dredging operations will be subdivided into project segments for sampling and analysis. Only material determined to be suitable through the verification process by the COE and EPA will be placed at the designated ocean disposal site.

Time of disposal. At present no restrictions have been determined to be necessary for disposal related to seasonal variations in ocean current or biotic activity. If new information indicates that endangered or threatened species are being adversely impacted, seasonal restrictions may be incurred.

The disposal of dredged material with a median grain size of less than 0.125 mm and material with a composition consisting of greater than 10% fine grained material (grain size of less than 0.074mm) by weight will be halted at the Miami ODMDS during periods of onshore current events. An approved real-time current monitoring program must be implemented by the user prior to disposal to ensure that fine grained sediments disposed at the Miami ODMDS are not transported to area reefs and hardbottoms.

Disposal Technique. No specific disposal technique is required for this site. Dredged material will be placed within a 500 foot radius of the center of site to additionally ensure protection of live bottom communities outside of the site and to contain the majority of the disposal mound and plume within the ODMDS boundaries during periods of strong currents.

SITE MONITORING

The MPRSA establishes the need for including a monitoring program as part of the Site Management Plan. Site monitoring is conducted to ensure the environmental integrity of a disposal site and the areas surrounding the site and to verify compliance with the site designation criteria, any special management conditions, and with permit requirements. Monitoring programs should be flexible, cost effective, and based on scientifically sound procedures and methods to meet site-specific monitoring needs. A monitoring program should have the ability to detect environmental change and assist in determining regulatory and permit compliance. The intent of the program is to provide the following:

(1) Information indicating whether the disposal activities are occurring in compliance with the permit and site restrictions; and/or

(2) Information concerning the short-term and long-term environmental impacts of the disposal; and/or

(3) Information indicating the short-term and long-term fate of materials disposed of in the marine environment.

The main purpose of a disposal site monitoring program is to determine whether dredged material site management practices, including disposal operations, at the site need to be changed to avoid significant adverse impacts.

Baseline Monitoring. The results of investigations presented in the designation EIS will serve as a general pre-disposal characterization of the ODMDS and nearby vicinity (see EIS Appendix A). Site specific investigations included: *1985 Environmental Survey in the Vicinity of An Ocean Dredged Material Disposal Site, Miami Harbor, Florida*; and *1986 Miami Harbor Interim Ocean Dredged Material Disposal Site Video Survey*.

A bathymetric survey will be conducted by the COE or site user not more than 60 days prior to the dredging cycle or project disposal. The surveys will be taken along lines spaced at 500 foot intervals or less and be of sufficient length to adequately cover the disposal area. Accuracy of the surveys will be $\pm$ 0.5 feet. These surveys will be referenced to the appropriate datum and corrected for tide conditions at the time of survey.

Disposal Monitoring. For all disposal activities, the dredging contractor will be required to prepare and operate under an approved electronic verification plan for all disposal operations. As part of this plan, the contractor will provide an automated system that will track (1 to 5 minute intervals) the horizontal location and draft condition (vertical) of the disposal vessel from the point of dredging to the disposal area, and return to the point of dredging. Required digital data for each load are as follows:

(a) Date;

(b) Time;

(c) Vessel Name;

(d) Dump Number;

(e) Map Number on which dump is plotted (if appropriate);

(f) Beginning and ending coordinates of the dredging area for each load;

(g) Actual location at points of initiation and completion of disposal event and the compass heading at the beginning of each dump;

(h) Description of material disposed, e.g., rock, sand, silt, or clay;

(i) Volume of material disposed; and

(j) Disposal technique used.

As a precaution to protect marine mammals as well as sea turtles during disposal operations, a bow observer will be stationed on vessels participating in disposal activities.

As a follow-up to the baseline bathymetric survey, the COE or other site user will conduct a bathymetric survey within 30 days after disposal. The number of transects required will be the same as in the baseline survey. The user will be required to prepare daily reports of operations and submit to the COE a monthly report of operations for each month or partial month's work. The user is also required to notify the COE and EPA within 24 hours of becoming aware of a violation of the permit and/or contract conditions during disposal operations.

Material Tracking. Based on the type and volume of material disposed, various monitoring surveys may be used to determine if and where the disposed material is moving.

The primary concern regarding use of the Miami ODMDS is the potential for adverse impact on nearshore reefs due to short and long-term transport of dredged material from the ODMDS and subsequent sedimentation and/or light attenuation. The management requirements discussed previously have been adopted to minimize this potential. To further quantify the potential of impact, the Site Management and Monitoring Team has decided to focus monitoring efforts on analysis of the transport mechanisms at the ODMDS.

The Site Management and Monitoring Team has identified two major monitoring objectives: 1) Assess intensity and frequency of

disposal plumes reaching nearshore reefs, 2) Assess the potential for long-term transport of dredged material towards critical habitats. Additional objectives may be added as new information is obtained from the current monitoring system and from the studies described below.

Objective 1

Field studies will be conducted during the current Miami Harbor Deepening Project to quantify disposal plume concentrations during onshore current events due to Florida Current Spinoff Eddies. Data collected from these field studies will be used to calibrate computer models for at least two separate current regimes (eddy present and eddy absent) for assessing the intensity and frequency of disposal plumes reaching nearshore reefs. Results from the computer modelling will be examined with respect to potential impact on the reef communities. Based on the expected impact, the real-time current monitoring management requirement can be modified or discontinued. The monitoring plan for this objective is currently under development.

Objective 2

Field studies will be conducted to quantify bottom currents and dredged material resuspension at the Miami ODMDS. Data collected from these field studies will be used in calibrating computer models for assessing the potential for long-term transport of dredged material towards critical habitats. Should the modelling indicate that significant quantities of dredged material will reach critical habitats, management techniques will be examined or the ODMDS will be relocated. The monitoring plan for this objective is currently under development.

Reporting and Data Formatting. Disposal summary reports should be provided by the COE to EPA within 45 days after project completion. These should consist of dates of disposal, volume of disposal, approximate location of disposal and pre- and post-disposal bathymetric survey results in both hard copy and electronic formats. Other disposal data should be available upon request. In addition, EPA should be notified of ODMDS use 15 days prior to dredging cycle or project disposal.

A brief report on the real-time monitoring results should be provided to SMMP team members by the permittee within 45 days after project completion. This report should include: number of times disposal was delayed due to restricted current conditions; the date, time and duration of each delay; any operational or logistical inconsistencies or complications in conducting this program; and any conclusions or recommendations.

Material tracking, disposal effects monitoring and any other data collected should be provided to SMMP team members and federal and state agencies as appropriate. Data will be provided to other interested parties requesting such data to the extent possible. Data will be provided for all surveys in a report generated by the

action agency. The report should indicate how the survey relates to the SMMP and previous surveys at the Miami ODMDS and should provide data interpretations, conclusions, and recommendations, and should project the next phase of the SMMP.

Modification of ODMDS SMMP. The SMMP will be modified on an as needed basis. Should the results of the monitoring surveys indicate that continuing use of the ODMDS would lead to unacceptable impacts, then either the ODMDS Management Plan will be modified to alleviate the impacts, or the location of the ODMDS would be modified. In addition, should the results of the monitoring surveys indicate that specific management practices are not needed, then the SMMP would be modified. The SMMP will be reviewed and revised if appropriate at a minimum of every ten years.